



09/903190
CNC

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Commissioner for Patents, P.O. Box 1450
Alexandria, VA 22313 on July 31, 2006

Frank C Eisenschenk

Frank C. Eisenschenk, Ph.D., Patent Attorney

REQUEST FOR CERTIFICATE OF
CORRECTION UNDER 37 C.F.R. 1.322
AND UNDER 37 C.F.R. 1.323
Docket No. G-036US03DIV
Patent No. 6,936,692

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Jean-Baptiste Dumas Milne Edwards, Aymeric Duclert, Lydie Bougueleret

Issued : August 30, 2005

Patent No. : 6,936,692

For : Complementary DNAs

Certificate

AUG 07 2006

of Correction

Mail Stop Certificate of Corrections Branch
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR CERTIFICATE OF CORRECTION
UNDER 37 CFR 1.322 (OFFICE MISTAKE) AND
UNDER 37 CFR 1.323 (APPLICANTS' MISTAKE)

Sir:

A Certificate of Correction (in duplicate) for the above-identified patent has been prepared and is attached hereto.

In the left-hand column below is the column and line number where errors occurred in the patent. In the right-hand column is the page and line number in the application where the correct information appears.

Patent Reads:

Column 17, line 42:

"TCC AGA ATG GGA GAG AAG CCA ATT
T"

Application Reads:

Page 27, line 25:

--TCC AGA ATG GGA GAC AAG CCA ATT
T--

08/04/2006 EFLORES 00000065 190065 6936692

01 FC:1811 100.00 DA

Column 21, line 59:

“dNTPs (Boebringner)”

Column 22, line 3:

“Boebringner.”

Column 26, line 41:

“human biotimidase”

Patent Reads:

Column 45, lines 21-22:

“Accession #xxxxxx”

Patent Reads:

Column 48, line 39:

“ $T_m = 81.5 + 16.6(\log [Na^+]) + 0.41(\text{fraction})$ ”

Column 65, line 27:

“bums”

Patent Reads:

Column 67, line 62:

“chemokinetic protein”

Column 69, line 25:

“immune responses”

Column 87, line 1:

“GGGG”

Page 35, line 14:

--dNTPs (Boehringner)--

Page 35, line 22:

“Boehringner.”

Page 43, line 1:

--human biotinidase--

Application Should Read:

Page 72, line 30:

--Accession # 99012901--

Application Reads:

Page 78, line 6:

-- $T_m = 81.5 + 16.6(\log [Na^+]) + 0.41(\text{fraction})$ --

Page 104, line 8:

--burns--

Application Should Read:

Page 108, line 4:

--chemokinetic protein--

Page 110, line 15:

--immune responses--

Page 139, line 13:

--GGG--

Page 171, Id numbers 71-84 of Table VI:

“71 ECACC# XXXX	Signal Tag 28011 999	--71 ECACC# 99012901	Signal Tag 28011 999
72 ECACC# XXXX	Signal Tag 28011 999	72 ECACC# 99012901	Signal Tag 28011 999
73 ECACC# XXXX	Signal Tag 28011 999	73 ECACC# 99012901	Signal Tag 28011 999
74 ECACC# XXXX	Signal Tag 28011 999	74 ECACC# 99012901	Signal Tag 28011 999
75 ECACC# XXXX	Signal Tag 28011 999	75 ECACC# 99012901	Signal Tag 28011 999
76 ECACC# XXXX	Signal Tag 28011 999	76 ECACC# 99012901	Signal Tag 28011 999
77 ECACC# XXXX	Signal Tag 28011 999	77 ECACC# 99012901	Signal Tag 28011 999
78 ECACC# XXXX	Signal Tag 28011 999	78 ECACC# 99012901	Signal Tag 28011 999
79 ECACC# XXXX	Signal Tag 28011 999	79 ECACC# 99012901	Signal Tag 28011 999
80 ECACC# XXXX	Signal Tag 28011 999	80 ECACC# 99012901	Signal Tag 28011 999
81 ECACC# XXXX	Signal Tag 28011 999	81 ECACC# 99012901	Signal Tag 28011 999
82 ECACC# XXXX	Signal Tag 28011 999	82 ECACC# 99012901	Signal Tag 28011 999
83 ECACC# XXXX	Signal Tag 28011 999	83 ECACC# 99012901	Signal Tag 28011 999
84 ECACC# XXXX	Signal Tag 28011 999”	84 ECACC# 99012901	Signal Tag 28011 999--.

A true and correct copy of pages 27, 35, 43, 78, and 104 of the specification as filed which support Applicants' assertion of the errors on the part of the Patent Office accompanies this Certificate of Correction. A true and correct copy of the Centre for Applied Microbiology and Research & European Collection of Cell Cultures (ECACC) document showing the Accession No. of 99012901 for the pool of cells designated as Signal Tag 28011999 is enclosed.

Applicants respectfully assert that there are only 3 consecutive “g” nucleotides in SEQ ID NO: 32 and not 4 (Applicants’ error at Column 87, line 1) and have provided a copy of the page from the patent showing the correct sequence for SEQ ID NO: 32.

The Commissioner is authorized to charge the fee of \$100.00 for the amendment to Deposit Account No. 19-0065. The Commissioner is also authorized to charge any additional fees as required under 37 CFR 1.20(a) to Deposit Account No. 19-0065. Two copies of this letter are enclosed for Deposit Account authorization.

Approval of the Certificate of Correction is respectfully requested.

Respectfully submitted,



Frank C. Eisenschenk, Ph.D.

Patent Attorney

Registration No. 45,332

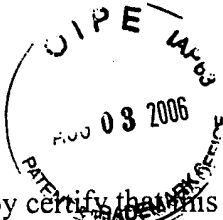
Phone No.: 352-375-8100

Fax No.: 352-372-5800

Address: P.O. Box 142950
Gainesville, FL 32614-2950

FCE/sl

Attachments: Pages 27, 35, 43, 78, and 104 of the specification as filed
Copy of the Centre for Applied Microbiology and Research & European
Collection of Cell Cultures (ECACC) document
Copy of page showing SEQ ID NO: 32 from 6,936,692 patent



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Column 107, lines 48-59, Table VI:Page 171, Id numbers 71-84 of Table VI:

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72 ECACC# XXXX Signal Tag 28011 999	72 ECACC# 99012901 Signal Tag 28011 999
73 ECACC# XXXX Signal Tag 28011 999	73 ECACC# 99012901 Signal Tag 28011 999
74 ECACC# XXXX Signal Tag 28011 999	74 ECACC# 99012901 Signal Tag 28011 999
75 ECACC# XXXX Signal Tag 28011 999	75 ECACC# 99012901 Signal Tag 28011 999
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81 ECACC# XXXX Signal Tag 28011 999	81 ECACC# 99012901 Signal Tag 28011 999
82 ECACC# XXXX Signal Tag 28011 999	82 ECACC# 99012901 Signal Tag 28011 999
83 ECACC# XXXX Signal Tag 28011 999	83 ECACC# 99012901 Signal Tag 28011 999
84 ECACC# XXXX Signal Tag 28011 999"	84 ECACC# 99012901 Signal Tag 28011 999--.

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Copy of page showing SEQ ID NO: 32 from 6,936,692 patent

membrane after the cDNA:RNA heteroduplexes had been subjected to an alkaline hydrolysis in order to eliminate the RNAs. An oligonucleotide having a sequence identical to that of the derivatized oligonucleotide was labeled at its 5' end with ^{32}P and hybridized to the cDNA blots using conventional techniques. Single-stranded cDNAs resulting from the reverse transcription reaction were spotted on the membrane. As controls, the blot contained 1 pmol, 100 fmol, 50 fmol, 10 fmol and 1 fmol respectively of a control oligodeoxyribonucleotide of sequence identical to that of the derivatized oligonucleotide. The signal observed in the spots containing the cDNA indicated that approximately 15 fmol of the derivatized oligonucleotide had been reverse transcribed.

[0117] These results demonstrate that the reverse transcription can be performed through the cap and, in particular, that reverse transcriptase crosses the 5'-P-P-P-5' bond of the cap of eukaryotic messenger RNAs.

[0118] The single stranded cDNAs obtained after the above first strand synthesis were used as template for PCR reactions. Two types of reactions were carried out. First, specific amplification of the mRNAs for the alpha globin, dehydrogenase, pp15 and elongation factor E4 were carried out using the following pairs of oligodeoxyribonucleotide primers.

alpha-globin

GLO-S: CCG ACA AGA CCA ACG TCA AGG CCG C (SEQ ID NO:5)

GLO-As: TCA CCA GCA GGC AGT GGC TTA GGA G 3' (SEQ ID NO:6)

dehydrogenase

3 DH-S: AGT GAT TCC TGC TAC TTT GGA TGG C (SEQ ID NO:7)

3 DH-As: GCT TGG TCT TGT TCT GGA GTT TAG A (SEQ ID NO:8)

pp15

PP15-S: TCC AGA ATG GGA GAC AAG CCA ATT T (SEQ ID NO:9)

PP15-As: AGG GAG GAG GAA ACA GCG TGA GTC C (SEQ ID NO:10)

Elongation factor E4

EFA1-S: ATG GGA AAG GAA AAG ACT CAT ATC A (SEQ ID NO:11)

into double stranded DNA using a DNA polymerase such as the ThermoSequenase obtained from Amersham Pharmacia Biotech. Alternatively, protocols such as the Gene Trapper kit (Gibco BRL) may be used. The double stranded DNA was then electroporated into bacteria. The percentage of positive clones having the 5' tag oligonucleotide was
5 estimated to typically rank between 90 and 98% using dot blot analysis.

[0149] Following electroporation, the libraries were ordered in 384-microtiter plates (MTP). A copy of the MTP was stored for future needs. Then the libraries were transferred into 96 MTP and sequenced as described below.

10

EXAMPLE 17

Sequencing of Inserts in Selected Clones

[0150] Plasmid inserts were first amplified by PCR on PE 9600 thermocyclers (Perkin-Elmer), using standard SETA-A and SETA-B primers (Genset SA), AmpliTaqGold (Perkin-Elmer), dNTPs (Boehringer), buffer and cycling conditions as
15 recommended by the Perkin-Elmer Corporation.

[0151] PCR products were then sequenced using automatic ABI Prism 377 sequencers (Perkin Elmer, Applied Biosystems Division, Foster City, CA). Sequencing reactions were performed using PE 9600 thermocyclers (Perkin Elmer) with standard dye-primer chemistry and ThermoSequenase (Amersham Life Science). The primers used
20 were either T7 or 21M13 (available from Genset SA) as appropriate. The primers were labeled with the JOE, FAM, ROX and TAMRA dyes. The dNTPs and ddNTPs used in the sequencing reactions were purchased from Boehringer. Sequencing buffer, reagent concentrations and cycling conditions were as recommended by Amersham.

[0152] Following the sequencing reaction, the samples were precipitated
25 with EtOH, resuspended in formamide loading buffer, and loaded on a standard 4% acrylamide gel. Electrophoresis was performed for 2.5 hours at 3000V on an ABI 377 sequencer, and the sequence data were collected and analyzed using the ABI Prism DNA Sequencing Analysis Software, version 2.1.2.

like protein, human pleiotropin, and human biotinidase precursor all of which are polypeptides which are known to be secreted, were obtained. Thus, the above method successfully identified those 5' ESTs which encode a signal peptide.

5 [0183] To confirm that the signal peptide encoded by the 5' ESTs actually functions as a signal peptide, the signal sequences from the 5' ESTs may be cloned into a vector designed for the identification of signal peptides. Some signal peptide identification vectors are designed to confer the ability to grow in selective medium on host cells which have a signal sequence operably inserted into the vector. For example, to confirm that a 5' EST encodes a genuine signal peptide, the signal sequence of the 5' EST may be inserted
10 upstream and in frame with a non-secreted form of the yeast invertase gene in signal peptide selection vectors such as those described in U.S. Patent No. 5,536,637, the disclosure of which is incorporated herein by reference. Growth of host cells containing signal sequence selection vectors having the signal sequence from the 5' EST inserted therein confirms that the 5' EST encodes a genuine signal peptide.

15 [0184] Alternatively, the presence of a signal peptide may be confirmed by cloning the extended cDNAs obtained using the ESTs into expression vectors such as pXT1 (as described below), or by constructing promoter-signal sequence-reporter gene vectors which encode fusion proteins between the signal peptide and an assayable reporter protein. After introduction of these vectors into a suitable host cell, such as COS cells or
20 NIH 3T3 cells, the growth medium may be harvested and analyzed for the presence of the secreted protein. The medium from these cells is compared to the medium from cells containing vectors lacking the signal sequence or extended cDNA insert to identify vectors which encode a functional signal peptide or an authentic secreted protein.

25 [0185] Those 5' ESTs which encoded a signal peptide, as determined by the method of Example 22 above, were further grouped into four categories based on their homology to known sequences. The categorization of the 5' ESTs is described in Example 24 below.

1103-7 2006

1103-6

[0308] For probes between 14 and 70 nucleotides in length the melting temperature (T_m) is calculated using the formula: $T_m = 81.5 + 16.6(\log [Na^+] + 0.41(\text{fraction G+C}) - (600/N))$ where N is the length of the probe.

5 [0309] If the hybridization is carried out in a solution containing formamide, the melting temperature may be calculated using the equation $T_m = 81.5 + 16.6(\log [Na^+] + 0.41(\text{fraction G+C}) - (0.63\% \text{ formamide}) - (600/N))$ where N is the length of the probe.

[0310] Prehybridization may be carried out in 6X SSC, 5X Denhardt's reagent, 0.5% SDS, 100 μ g denatured fragmented salmon sperm DNA or 6X SSC, 5X Denhardt's reagent, 0.5% SDS, 100 μ g denatured fragmented salmon sperm DNA, 50% formamide. The formulas for SSC and Denhardt's solutions are listed in Sambrook *et al.*, *supra*.

[0311] Hybridization is conducted by adding the detectable probe to the prehybridization solutions listed above. Where the probe comprises double stranded DNA, it is denatured before addition to the hybridization solution. The filter is contacted with the hybridization solution for a sufficient period of time to allow the probe to hybridize to extended cDNAs or genomic DNAs containing sequences complementary thereto or homologous thereto. For probes over 200 nucleotides in length, the hybridization may be carried out at 15-25°C below the T_m . For shorter probes, such as oligonucleotide probes, the hybridization may be conducted at 15-25°C below the T_m . Preferably, for hybridizations in 6X SSC, the hybridization is conducted at approximately 68°C. Preferably, for hybridizations in 50% formamide containing solutions, the hybridization is conducted at approximately 42°C.

[0312] All of the foregoing hybridizations would be considered to be under "stringent" conditions.

[0313] Following hybridization, the filter is washed in 2X SSC, 0.1% SDS at room temperature for 15 minutes. The filter is then washed with 0.1X SSC, 0.5% SDS at room temperature for 30 minutes to 1 hour. Thereafter, the solution is washed at the hybridization temperature in 0.1X SSC, 0.5% SDS. A final wash is conducted in 0.1X SSC at room temperature.

DT, eds.), Year Book Medical Publishers, Inc., Chicago, as modified by Eaglstein and Mertz, J. Invest. Dermatol 71:382-84 (1978) which are incorporated herein by reference.

5 [0384] Those proteins which are involved in the regulation of tissue growth may then be formulated as pharmaceuticals and used to treat clinical conditions in which regulation of tissue growth is beneficial. For example, a protein of the present invention also may have utility in compositions used for bone, cartilage, tendon, ligament and/or nerve tissue growth or regeneration, as well as for wound healing and tissue repair and replacement, and in the treatment of burns, incisions and ulcers.

10 [0385] A protein of the present invention, which induces cartilage and/or bone growth in circumstances where bone is not normally formed, has application in the healing of bone fractures and cartilage damage or defects in humans and other animals. Such a preparation employing a protein of the invention may have prophylactic use in closed as well as open fracture reduction and also in the improved fixation of artificial joints. De novo bone formation induced by an osteogenic agent contributes to the repair of
15 congenital, trauma induced, or oncologic resection induced craniofacial defects, and also is useful in cosmetic plastic surgery.

[0386] A protein of this invention may also be used in the treatment of periodontal disease, and in other tooth repair processes. Such agents may provide an environment to attract bone-forming cells, stimulate growth of bone-forming cells or
20 induce differentiation of progenitors of bone-forming cells. A protein of the invention may also be useful in the treatment of osteoporosis or osteoarthritis, such as through stimulation of bone and/or cartilage repair or by blocking inflammation or processes of tissue destruction (collagenase activity, osteoclast activity, etc.) mediated by inflammatory processes.

25 [0387] Another category of tissue regeneration activity that may be attributable to the protein of the present invention is tendon/ligament formation. A protein of the present invention, which induces tendon/ligament-like tissue or other tissue formation in circumstances where such tissue is not normally formed, has application in the healing of tendon or ligament tears, deformities and other tendon or ligament defects in
30 humans and other animals. Such a preparation employing a tendon/ligament-like tissue inducing protein may have prophylactic use in preventing damage to tendon or ligament

-continued

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tgagtgcagt gttacatgtc agttggggtta agtttggttaa tgcattcaa atcttctatg      60
tcttgatttg cctgctaatt ctattatttc tggaactaaa ttagtttgat ggttctatta      120
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<222> LOCATION: complement(126..134)

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AUG -7 2006

THE COMPLE

SOLUTION



ecacc
European Collection
of Cell Cultures

BEST AVAILABLE COPY

Centre for Applied Microbiology and Research & European Collection of Cell Cultures

This document certifies that DNA
(Deposit Ref. 99012901) has been accepted as a patent deposit,
in accordance with
The Budapest Treaty of 1977,
with the European Collection of Cell Cultures on 29TH January 1999

P. J. Packer

.....
Dr P J Packer
Quality Manager, ECACC

AUG - 7 2006

CAMR
Today's Research
Tomorrow's Health

European Collection of Cell Cultures, CAMR, Salisbury, Wiltshire SP4 0JG UK.

Tel: 44 (0) 1980 612512 Fax: 44 (0) 1980 611315 Email: ecacc@camr.org.uk Web Site: ecacc.org.uk

BUDAPEST TREATY ON THE INTERNATIONAL
RECOGNITION OF THE DEPOSIT OF MICROORGANISMS
FOR THE PURPOSES OF PATENT PROCEDURE

TO
INTERNATIONAL FORM

GENSET SA
24 RUE ROYALE
F-75008 PARIS
FRANCE

NAME AND ADDRESS
OF DEPOSITOR

I. IDENTIFICATION OF THE MICROORGANISM	
Identification reference given by the DEPOSITOR: SIGNAL TAG 28011999	Accession number given by the INTERNATIONAL DEPOSITORY AUTHORITY: 99012901
II. SCIENTIFIC DESCRIPTION AND/OR PROPOSED TAXONOMIC DESIGNATION	
The microorganism identified under I above was accompanied by:	
<input checked="" type="checkbox"/>	A scientific description
<input type="checkbox"/>	A proposed taxonomic designation
(Mark with a cross where applicable)	
III. RECEIPT AND ACCEPTANCE	
This International Depository Authority accepts the microorganism identified under I above, which was received by it on 29 TH January 1999 (date of the original deposit) ¹	
IV. RECEIPT OF REQUEST FOR CONVERSION	
The microorganism identified under I above was received by this International Depository Authority on (date of the original deposit) and A request to convert the original deposit to a deposit under the Budapest Treaty was received by it on (date of receipt of request for conversion)	
IV. INTERNATIONAL DEPOSITORY AUTHORITY	
Name: Dr P J Packer	Signature(s) of person(s) having the power to represent the International Depository Authority or of authorized officials(s):
Address: ECACC CAMR Porton Down Salisbury SP4 0JG	Date: 6/2/01 P. J. Packer

1 Where Rule 6.4(d) applies, such date is the date on which the status of international depository
authority was acquired

AUG - 7 2006

BUDAPEST TREATY ON THE INTERNATIONAL
RECOGNITION OF THE DEPOSIT OF MICROORGANISMS
FOR THE PURPOSES OF PATENT PROCEDURE

INTERNATIONAL FORM

TO

GENSET SA
24 RUE ROYALE
F-75008 PARIS
FRANCE

VIABILITY STATEMENT

Issued pursuant to Rule 10.2 by the
INTERNATIONAL DEPOSITARY AUTHORITY
identified on the following page

NAME AND ADDRESS OF THE PARTY
TO WHOM THE VIABILITY OF STATEMENT
IS ISSUED

I. DEPOSITOR	II. IDENTIFICATION OF THE MICROORGANISM
<p>Name: GENSET SA</p> <p>Address: 24 RUE ROYALE F-75008 PARIS FRANCE</p>	<p>Accession number given by the INTERNATIONAL DEPOSITARY AUTHORITY: 99012901</p> <p>Date of the deposit or of the transfer: 29TH January 1999</p>
II. VIABILITY STATEMENT	
<p>The viability of the microorganism identified under II above was tested on ². On that date, the said microorganism was</p> <p><input checked="checked" type="checkbox"/> ³ viable</p> <p><input type="checkbox"/> ³ no longer viable</p>	

- 1 Indicate the date of the original deposit or, where a new deposit or a transfer has been made, the most relevant date (date of the new deposit or date of the transfer).
- 2 In the cases referred to in Rule 10.2 (a) (ii) and (iii), refer to the most recent viability test.
- 3 Mark with a cross the applicable box.

AUG - 7 2006

IV. CONDITIONS UNDER WHICH THE VIABILITY TEST HAS BEEN PERFORMED

SIGNAL TAG 28011999 - 99012901

THE CELLS WERE SHOWN TO BE VIABLE AS DESCRIBED IN THE GENSET PROTOCOL.

V. INTERNATIONAL DEPOSITARY AUTHORITY

Name: Dr P J Packer
ECACC CAMR
Address: Porton Down
Salisbury
Wiltshire
SP4 0JG

Signature(s) of person(s) having the power
to represent the International Depositary
Authority or of authorized official(s):

Date: 6/2/01 P.J. Packer

4 Fill in if the information has been requested and if the results of the test were negative.

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,936,692

Page 1 of 3

APPLICATION NO.: 09/903,190

DATED : August 30, 2005

INVENTORS : Jean-Baptiste Dumas Milne Edwards, Aymeric Duclert, Lydie
Bougueleret

It is certified that errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 17.

Line 42, "TCC AGA ATG GGA GAG AAG CCA ATT T" should read
--TCC AGA ATG GGA GAC AAG CCA ATT T--.

Column 21.

Line 59, "dNTPs (Boebringner)" should read --dNTPs (Boehringer)--.

Column 22.

Line 3, "Boebringner." should read --Boehringer--.

Column 26.

Line 41, "human biotimidase" should read --human biotinidase--.

Column 45.

Lines 21-22, "Accession #xxxxxx" should read --Accession # 99012901--.

Column 48.

Line 39, " $T_m = 81.5 + 16.6(\log [Na^+]) + 0.41(\text{fraction})$ " should read
-- $T_m = 81.5 + 16.6(\log [Na^+]) + 0.41(\text{fraction})$ --.

Column 65.

Line 27, "bums" should read --burns--.

Column 67.

Line 62, "chmokinetic protein" should read --chemokinetic protein--.

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2006

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Column 69,

Line 25, "immune responses" should read --immune responses--.

Column 87,

Line 1, "GGGG" should read --GGG--.

Column 107,

Table VI, Lines 48-59,

"71	ECACC# XXXX	Signal Tag 28011 999
72	ECACC# XXXX	Signal Tag 28011 999
73	ECACC# XXXX	Signal Tag 28011 999
74	ECACC# XXXX	Signal Tag 28011 999
75	ECACC# XXXX	Signal Tag 28011 999
76	ECACC# XXXX	Signal Tag 28011 999
77	ECACC# XXXX	Signal Tag 28011 999
78	ECACC# XXXX	Signal Tag 28011 999
79	ECACC# XXXX	Signal Tag 28011 999
80	ECACC# XXXX	Signal Tag 28011 999
81	ECACC# XXXX	Signal Tag 28011 999
82	ECACC# XXXX	Signal Tag 28011 999
83	ECACC# XXXX	Signal Tag 28011 999
84	ECACC# XXXX	Signal Tag 28011 999"

should read

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